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ZEBRA GK420d™ & GK420t™ PRINTER SPECIFICATIONS

Specifications are provided for reference and are based on printer tests using Zebra brand ribbons and labels. Results may vary in actual application settings or when using other than recommended Zebra supplies. Zebra recommends always qualifying any application with thorough testing

Standard Features

- Maximum speed 5 ips (127 mm/s)
- OpenACCESS™ design for easy media loading
- 203 dpi print resolution (8 dots/mm)
- Direct thermal (d) and Thermal transfer (t) printing of bar codes, text, and graphics
- Fully enclosed 5.0" (127mm) media compartment
- Dual-wall frame
- ZPL II® programming language
- EPL2® page mode programming language
- EPL Line Mode support (GK420d)
- 32 bit RISC processor
- 8MB Standard SDRAM Memory (3MB available to user)
- 4MB Standard Flash Memory (1.5 MB available to user)
- Zebra E^3 Printhead Energy Control
- Dual communications interface: RS-232 Serial & USB (V1.1)
- User interface feed button (ZPL style)
- Odometer for print length tracking
- Unicode™ compliant for multi-language printing
- Auto-Calibration of media
- 16 resident expandable bitmap fonts (ZPL language)
- One resident scalable font (ZPL language)
- 5 resident expandable bitmap fonts (EPL language)
- Auto-switching 100- 240V power supply
- Transmissive and reflective media sensing
- Head-up sensor
- Programmable print speed: 2, 3, 4 & 5ips (51, 76, 102, 127 mm/s)
- Standard Tear-off mode feature
- Zebra printer driver for Windows

Optional Features

- **Dispenser (peeler) –** Label peel and present with label present sensor
- **ZebraNet™ 10/100 Print Server –** internal interface enables Ethernet 10/100 network communication and printing (replaces serial port)
- **Font Packs** – Asian and other international font kits
- **Power cord** – US, Europe, UK, Australia, Argentina, Japan, and China
- **ZBI 2.0 –** Factory or field installed

Accessories

KDU Plus- full size keyboard with LCD for stand alone printing applications
KDU- keyboard display unit for stand-alone printing applications where space is limited

ZebraLink Solutions

Software

ZebraDesigner Pro – An intuitive, easy-to-use software program for creating complex label designs (option)
ZebraDesigner – Offers basic features for simple label design (standard)
ZebraNet Bridge Enterprise – Centrally manage Zebra printers from a single PC screen anywhere on your global network (option)
ZebraNet Utilities v 7.0 – Provides enhanced printing, conversion, and administration capabilities; message management and more (standard)
Zebra Universal Driver – The most powerful driver available from Zebra for Windows 95/98/2000/2003/ME/NT/XP (standard)
ZebraDesigner Driver – Zebra driver compliant with Windows 95/98/2000/2003/ME/NT/XP, and Vista (downloadable from www.Zebra.com)
ZBI 2.0 –Powerful programming language that lets printers run standalone applications, connect to peripherals, and much more (option)
ZBI-Developer – Programming utility makes it dramatically easier for programmers to create and test complex ZBI 2.0 programs and distribute them to the printer (standard with ZBI 2.0)

Networking Options

Ethernet - ZebraNet™ 10/100 Print Server - Offered in combination with USB interface (replaces Serial port)

Firmware

EPL2®– Eltron Programming Language simplifies label formatting and enables format compatibility with legacy applications
EPL– Line Mode support (GK420d) enables format compatibility with legacy applications

ZPL II – Zebra Programming Language
Provides sophisticated label formatting and printer control. Compatible with tabletop and mobile Zebra printers
Web View –Connect and control Zebra bar code printers via the printer's Web interface using a common Web browser
Alert – Printers equipped with ZebraNet print servers will notify you via any email-enabled, wired, or wireless device to minimize downtime

Printing Specifications

- Resolution: 203 dots/inch (dpi) (8 dots/mm)
- Dot Pitch: 0.0049" (0.125mm)
- Maximum print length: 39.0" (991mm)
- Minimum print length: 0.005" (0.127mm – one dot)
- Print length in line mode: Unlimited (GK420d)
- Maximum print width: 4.09" (104mm)
- Minimum print width: 0.005" (0.127mm – one dot)
- Programmable print speed: 2, 3, 4 & 5ips (51, 76, 102, 127 mm/s)
- Bar code modulus "X" dimension: 203 dpi = 5mil to 50mil

Ribbon Specifications (thermal transfer units)

NOTE: For optimum print quality and printer performance, use of Zebra genuine ribbon is recommended as well as a notched ribbon core.

- Ribbon Width: 1.33" (33.8mm) to 4.3" (109mm).
- Ribbon Capacity: 1 roll of ribbon per 1 roll of 5"OD media
- Core ID: 0.5" (12.7 mm).
- Ribbon OD: 1.36" (35 mm).
- Ribbon Length: 244' (74m) using 0.000328" ribbon thickness
- Ribbon Type: Wax, wax/resin, and resin.

Media Specifications

NOTE: For optimum print quality and printer performance, use of Zebra genuine supplies is recommended.

- Media Width: 0.75" (19mm) – 4.25" (108mm)
- Label Length:
  - Using tear off mode:

Minimum Length	Model	Printing Mode
0.38" (9.7 mm)	GK420d	Direct thermal
0.38" (9.7 mm)	GK420t	Thermal transfer
0.5" (12.7 mm)	GK420t	Direct thermal

  - Minimum using dispenser -0.50"(12.7 mm)
  - Maximum - 39.00" (990mm)
- Min Core Inner Diameter: 0.5" (12.7mm)
- Max Roll Diameter: 5.00" (127mm)
- Media Thickness: 0.003" (0.08mm) - 0.0075" (0.19 mm)
- Media Sensing: fixed reflective and transmissive gap, black line, and notch
- Media Types: Roll-fed or fan-fold, die cut or continuous direct thermal labels with or without black line, tag stock, continuous receipt paper, and wristbands

Calibration Procedure

- The GK420 is equipped with a standard auto-calibration feature that can be set to initiate automatically during start-up of the printer - utilizing two to four labels to calibrate for efficient operation and less waste. The printer will also save the new settings in memory until the next calibration is performed.
- A manual calibration procedure can also be performed, if required. Consult your User's Guide for more details on the specific manual calibration steps.

ZPL Programming Language (ZPL/ZPL II)

- Communicates in printable ASCII characters
- Compatible with mainframe, mini, and PC hosts
- Downloadable objects include graphics and bitmap fonts, label templates and formats
- Automatic memory allocation for format while printing
- Automatic serialization of fields
- Format inversion (white on black)
- Mirror-image printing
- Four position field rotation (0º, 90º, 180º, 270º)
- Slew command
- Programmable label quantities with print, pause
- Status messages to host upon request

ZPL Font Specifications

203 dpi (8 dots/mm)

Font	Matrix (in dots) (H x W)	Type*	Minimum Char. Size (H x W)	Maximum C.P.I.
A	9 x 5	U-L-D	.044" x .030"	33.3
B	11 x 7	U	.054" x .044"	22.7
C,D	18 x 10	U-L-D	.089" x .059"	16.9
E	28 x 15	OCR-B	.138" x .098"	10.2
F	26 x 13	U-L-D	.128" x .079"	12.7
G	60 x 40	U-L-D	.295" x .236"	4.2
H	21 x 13	OCR-A	.103" x .093"	10.8
GS	24 x 24	SYMBOL	.118" x .118"	8.5
P-V		U-L-D	Backward compatible w/ S-300	
Ø	15 x 12	U-L-D	Scalable (Smooth) Font	

** U = upper case, L = lower case, D = descenders*

- Character Fonts: Standard bitmapped Zebra fonts: A, B, C, D, E (OCR-B), F, G, H, (OCR-A), GS, P, Q, R, S, T, U, V & Ø Smooth font (CG Triumvirate™ Bold Condensed).
- Supports user defined fonts and graphics – including custom logos
- Bitmap fonts are expandable up to 10 times, height and width independent. Fonts E and H (OCR-B and OCR-A), however, are not considered in spec when expanded.
- Smooth scalable font Ø (CG Triumvirate™ Bold Condensed) is expandable dot-by-dot, height and width independent, while maintaining edges to a max. 1500 x 1500 dots.

ZPL Barcode Symbologies

- **Bar code ratios**: 2:1 (non-rotated) and 3:1
- **Linear bar codes:** Code 11, Code 39, Code 93, Code 128, UPC-A, UPC-E, EAN-8, EAN-13, EAN-14, UPC-A and UPC-E with EAN 2 or 5 digit extensions, Plessey, POSTNET, Standard 2 of 5, Industrial 2 of 5, Interleaved 2 of 5, LOGMARS, MSI, Codabar, and GS1 DataBar™ (formerly RSS)
- **2-dimensional bar codes:** PDF417, MicroPDF-417, Code 49, Maxicode, Codablock, Data Matrix, QR code, and Aztec

EPL Programming Language (EPL2)

- ASCII EPL2 programming language (Page Mode)
- Field Rotations
- Variable field support (up to 100)
- Counter support (up to 10)
- Variable field addition and subtraction
- Status reporting
- Form, fonts, and graphics storage
- Simple set of formatting commands

EPL Font Specifications

203 dpi (8 dots/mm)

Font	Width (dot)	Height (dot)	CPI
1	8	12	20.3
2	10	16	16.9
3	12	20	4.5
4	14	24	12.7
5	32	48	5.6
8-Simp	32	32	6.3*
8-Trad	32	32	6.3*

* Spacing of Asian characters is controlled via the i command. The formula for CPI is 203 / (32 + i). Thus as i increases, CPI decreases. For example : If i = 2, CPI = 203/34 = 6.0

EPL Bar Codes Symbologies

- **Linear bar codes:** Code 39, Code 128A, B & C (User selectable/Auto), UCC/EAN-128, Code 93, Codabar, Interleaved 2 of 5, UPC-A, UPC-E, UPC-A with 2 and 5 add on, UPC-E with 2 and 5 add on, EAN 13, EAN 8, EAN 13 with 2 and 5 add on, EAN 8 with 2 and 5 add on, Postnet (5, 9, 11, & 13 digit)
  Japanese Postnet, Plessey (MSI-1), MSI-3, German Post Code, and GS1 DataBar™ (formerly RSS)

- **2-dimensional bar codes:** Maxicode (modes 2,3,4,6), PDF417, MacroPDF417, QR Code, Data Matrix, and Aztec

Communications Specifications

- RS-232 Serial interface, DB-9
- USB V1.1, bi-directional
- Internal 10/100 Ethernet – optional (replaces RS232)

Electrical Specifications

- Auto-detectable (PFC Compliant) 100-240VAC, 50-60Hz rated at 70Watts

Agency approvals

- **Emissions**: FCC Part 15, Subpart B, VCCI, C-Tick
- **Emissions and Susceptibility**: (CE): EN55022 Class-B, EN61000-3-2, EN61000-3-3, and EN55024
- **Safety***:* CB Scheme IEC 60950:1991 +A1 +A2 +A3 +A4, UL 60950 and C-UL, IRAM, NOM, AAMI, and CCC

Physical Specifications (*no options installed*)

	GK420d	GK420t
Height	6.0" (152mm)	7.5" (191mm)
Width:	6.75" (171mm)	7.6" (193 mm)
Depth:	8.25" (210mm)	10.0" (254 mm)
Weight:	3.0lbs (1.4kg)	4.6lbs (2.1kg)

Environmental Specifications

- Operating Temperature: 40º to 105ºF (4.4º to 41ºC)
- Storage Temperature: -40º to 140ºF (-40º to 60ºC)
- Operating Humidity: 10% to 90% non-condensing R.H.
- Storage Humidity: 5% to 95% non-condensing R.H.

Preventative Maintenance

- Zebra recommends cleaning the printer on a regular basis using standard Zebra printer parts and cleaning supplies. Consult your *User's Guide* for further details